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IN THE CLAIMS:

1. (currently amended) A transparent data path architecture for an optical-electrical-optical (OEO) switch comprising:

means to recover a data rate from an incoming serial signal;

means to monitor signal quality of the incoming signal using an ingress CDR to monitor data eye opening and using a Performance Monitoring Module to monitor layer 1 overhead of the incoming signal; and

means to provide data integrity across the transparent switching fabric.

2. (original) The transparent data path architecture as defined in claim 1 wherein said architecture is independent of input data rate.

3. (original) The transparent data path architecture as defined in claim 2 having means to switch an incoming signal independent of data protocol.

4. (original) The transparent data path architecture as defined in claim 3 wherein said means to recover a data rate from an incoming signal is capable of recovering a data rate from a wide range of data rates.

5. (currently amended) The transparent data path architecture as defined in claim 1 having means to switch a signal across said switch without modifying the data signal the incoming serial signal by adding data bits.

6. (currently amended) The transparent data path architecture as defined in claim 1 having means to switch a signal across said switch without modifying the data signal the incoming serial signal by changing data bits.

7. (currently amended) The transparent data path architecture as defined in claim 1 having means to switch a signal across said switch without modifying the data signal the incoming serial signal by deleting data bits.

8. (original) The transparent data path architecture as defined in claim 1 having means to extract layer-1 performance data from the incoming signal in a non-intrusive manner.

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9. (original) The transparent data path architecture as defined in claim 1 having means to extract layer-1 and layer-2 performance data from the incoming signal in a non-intrusive manner.

10. (original) The transparent data path architecture as defined in claim 1 having an active switching fabric plane and a back-up switching fabric plane.

11. (original) The transparent data path architecture as defined in claim 10 wherein data integrity is monitored across the active switching fabric plane and the back-up switching fabric plane.

12. (original) The transparent data path architecture as defined in claim 11 having means to select between said active switching plane and said back-up switching plane based on quality of data integrity between said switching fabric planes.

13. (original) The transparent data architecture as defined in claim 1 having means to provide line loopback of a signal having undergone re-shaping, re-amplification and re-shaping in a clock data recovery unit.

14. (original) The transparent data architecture as defined in claim 1 having means to provide loopback functionality wherein a signal is looped back through either the active switching fabric plane or the back-up switching fabric plane.

15. (currently amended) A method of providing data integrity of serial data signal through a transparent data path architecture of an optical-electrical-optical (OEO) switch, the method comprising:

providing means to recover a data rate from said incoming serial data signal;

providing means to switch a signal across a switching fabric, the switching fabric including an active fabric and a back-up fabric;

monitoring signal quality of the signal across respective switching fabrics using respective egress CDRs which monitor eye openings; and

selecting the signal across respective switching fabrics having a higher signal quality.

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16. (original) The method as defined in claim 15 wherein said transparent architecture is independent of data rate and data protocol.

17. (currently amended) A data rate and protocol independent data path architecture for an optical-electrical-optical (OEO) switch comprising:

- means to recover a range of signal data rates from an incoming serial signal;
- means to switch ~~any signal~~ the incoming serial signal, independent of data protocol;
- means to switch ~~any signal~~ the incoming serial signal across the switch without modifying the data signals;
- means to monitor signal quality of the incoming serial signal, independent of data rate or protocol;
- means to extract layer 1 and layer 2 performance data from the incoming serial signal in a non-intrusive manner; and
- means to provide data integrity across ~~the~~ a transparent switching fabric.

18. (new) The transparent data path architecture as defined in claim 11 wherein data integrity is monitored across the active switching fabric plane and the back-up switching fabric plane using two egress CDRs which monitor eye openings.